

Title (en)

Clamping ring and method and apparatus for using same.

Title (de)

Klemmring sowie Verfahren und Vorrichtung zu dessen Verwendung.

Title (fr)

Anneau de serrage, procédé et appareillage qui utilisent celui-ci.

Publication

EP 0598362 A1 19940525 (EN)

Application

EP 93118388 A 19931112

Priority

US 97518192 A 19921112

Abstract (en)

Described is a clamping ring (20) defining a ring opening (22) useful for securing a substrate like a semiconductor wafer during processing, for example in a physical vapor deposition system. The clamping ring (20) is made of a material having a low thermal coefficient of expansion, which is preferably nonconductive, for example a ceramic material, such as alumina. Such material, by exhibiting only slight expansion or contraction during thermal cycling, allows the production of a clamping ring (20) having the largest possible inner diameter, such that more substrate surface area is available for device fabrication, and such that substrate shadowing that results from metal film build-up on the clamping ring (20) is mitigated, thereby extending the useful life of the clamp ring (20) and reducing system downtime. Additionally, the thermal stability provided by the present invention improves substrate temperature uniformity, and therefore also improves per substrate device yield while increasing device reliability. Furthermore described is an apparatus and a method using the clamping ring (20). <IMAGE>

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IPC 8 full level

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CPC (source: EP KR US)

C23C 14/50 (2013.01 - EP US); **H01L 21/68** (2013.01 - KR)

Citation (search report)

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